



[7590-01-P]

NUCLEAR REGULATORY COMMISSION

[Docket No. 50-409; NRC-2018-0157]

LaCrosseSolutions, LLC; Dairyland Power Cooperative

La Crosse Boiling Water Reactor

AGENCY: Nuclear Regulatory Commission.

ACTION: Exemption; issuance.

SUMMARY: The U.S. Nuclear Regulatory Commission (NRC) is issuing an exemption in response to a February 22, 2018, request from LaCrosseSolutions, LLC (LS) from the regulatory requirement to maintain a specified level of onsite property damage insurance to permit the La Crosse Boiling Water Reactor (LACBWR) to reduce its onsite insurance coverage from \$180 million to \$50 million.

DATES: The exemption was issued on July 24, 2018.

ADDRESSES: Please refer to Docket ID **NRC-2018-0157** when contacting the NRC about the availability of information regarding this document. You may obtain publicly-available information related to this document using any of the following methods:

- **Federal Rulemaking Web Site:** Go to <http://www.regulations.gov> and search for Docket ID **NRC-2018-0157**. Address questions about NRC dockets to

Jennifer Borges; telephone: 301-287-9127; e-mail: Jennifer.Borges@nrc.gov. For technical questions, contact the individual listed in the **FOR FURTHER INFORMATION CONTACT** section of this document.

- **NRC's Agencywide Documents Access and Management System**

(ADAMS): You may obtain publicly available documents online in the ADAMS Public Documents collection at <http://www.nrc.gov/reading-rm/adams.html>. To begin the search, select "[ADAMS Public Documents](#)" and then select "[Begin Web-based ADAMS Search](#)." For problems with ADAMS, please contact the NRC's Public Document Room (PDR) reference staff at 1-800-397-4209, 301-415-4737, or by e-mail to pdresource@nrc.gov. The ADAMS accession number for each document referenced (if it is available in ADAMS) is provided the first time that it is mentioned in this document.

- **NRC's PDR:** You may examine and purchase copies of public documents at the NRC's PDR, Room O1-F21, One White Flint North, 11555 Rockville Pike, Rockville, Maryland 20852.

FOR FURTHER INFORMATION CONTACT: Marlayna G. Vaaler, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington DC 20555-0001; telephone: 301-415-3178, e-mail: Marlayna.Vaaler@nrc.gov.

SUPPLEMENTARY INFORMATION:

I. Background

The La Crosse Boiling Water Reactor was an Atomic Energy Commission (AEC) Demonstration Project Reactor that first went critical in 1967, commenced commercial

operation in November 1969, and was capable of producing 50 megawatts of electric power. The LACBWR site is located on the east bank of the Mississippi River in Vernon County, Wisconsin, and is co-located with the Genoa Generating Station, which is a coal-fired electrical power plant that is still in operation. The Allis-Chalmers Company was the original licensee; the AEC later sold the plant to the Dairyland Power Cooperative (DPC) and granted it Provisional Operating License No. DPR-45 on August 28, 1973 (ADAMS Accession No. ML17080A423).

The LACBWR permanently ceased operations on April 30, 1987 (ADAMS Accession No. ML17080A422), and reactor defueling was completed on June 11, 1987 (ADAMS Accession No. ML17080A420). In a letter dated August 4, 1987 (ADAMS Accession No. ML17080A393), the NRC terminated DPC's authority to operate LACBWR under Provisional Operating License No. DPR-45, and granted the licensee a possess-but-not-operate status. By letter dated August 18, 1988 (ADAMS Accession No. ML17080A421), the NRC amended DPC's Provisional Operating License No. DPR-45 to Possession Only License No. DPR-45 to reflect the permanently defueled configuration at LACBWR.

The NRC issued an order to authorize decommissioning of LACBWR and approve the licensee's proposed Decommissioning Plan (DP) on August 7, 1991 (ADAMS Accession No. ML17080A454). Because the NRC approved DPC's DP before August 28, 1996, pursuant to section 50.82 of title 10 of the *Code of Federal Regulations* (10 CFR), the DP is considered the Post-Shutdown Decommissioning Activities Report (PSDAR) for LACBWR. The PSDAR public meeting was held on May 13, 1998, and subsequent updates to the LACBWR decommissioning report have combined the DP and PSDAR into the "LACBWR Decommissioning Plan and Post-Shutdown Decommissioning Activities Report" (D-Plan / PSDAR). This document is also

considered the Final Safety Analysis Report (FSAR) for LACBWR and is updated every 24 months in accordance with 10 CFR 50.71(e). The DPC constructed an onsite Independent Spent Fuel Storage Installation (ISFSI) under its 10 CFR part 72 general license, and completed the movement of all 333 spent nuclear fuel elements from the Fuel Element Storage Well to dry cask storage at the ISFSI by September 19, 2012 (ADAMS Accession No. ML12290A027). The remaining associated buildings and structures are currently undergoing dismantlement and decommissioning activities.

By order dated May 20, 2016 (ADAMS Accession No. ML16123A073), the NRC approved the direct transfer of Possession Only License No. DPR-45 for LACBWR from DPC to LS, a wholly-owned subsidiary of EnergySolutions, LLC, and approved a conforming license amendment, pursuant to 10 CFR 50.80, "Transfer of licenses," and 10 CFR 50.90, "Application for amendment of license, construction permit, or early site permit," to reflect the change. The order was published in the *Federal Register* (FR) on June 2, 2016 (81 FR 35383). The transfer assigns DPC's licensed possession, maintenance, and decommissioning responsibilities for LACBWR to LS in order to implement expedited decommissioning at the LACBWR site. Decommissioning of the LACBWR facility and site is scheduled to be completed in 2018.

II. Request/Action

Pursuant to 10 CFR 50.12, "Specific exemptions," LS has requested an exemption from 10 CFR 50.54(w)(1) by letter dated February 22, 2018 (ADAMS Accession No. ML18057A021). The exemption from the requirements of 10 CFR 50.54(w)(1) would permit LS to reduce its onsite property damage insurance from \$180 million to \$50 million.

The regulation in 10 CFR 50.54(w)(1) requires each licensee to have and maintain onsite property damage insurance to stabilize and decontaminate the reactor and reactor site in the event of an accident. The onsite insurance coverage must be either \$1.06 billion or whatever amount of insurance is generally available from private sources (whichever is less). The LACBWR site currently maintains \$180 million in onsite insurance coverage in accordance with a previous exemption approved by the NRC on June 26, 1986 (51 FR 24456).¹

The licensee stated that there is a reduced potential for, and consequences from, an accident at a permanently shutdown and defueled reactor when compared to the risks at an operating power reactor. In addition, since the license no longer authorizes reactor operation or emplacement or retention of fuel in the reactor vessel at LACBWR, there are no events that would require the stabilization of reactor conditions after an accident. Similarly, the risk of an accident that that would result in significant onsite contamination at LACBWR is also much lower than the risk of such an event at an operating reactor. Therefore, LS requested an exemption from 10 CFR 50.54(w)(1) that would permit a reduction in its onsite property damage insurance from \$180 million to \$50 million, commensurate with the reduced risk of an accident at the permanently shutdown and defueled LACBWR reactor.

¹ At the time the previous exemption was granted in 1986, 10 CFR 50.54(w)(1) required the licensee to maintain on-site property insurance in the amount of \$500 million. Based on a finding that special circumstances were present, the Commission approved the licensee's exemption request to permit LACBWR to reduce its onsite insurance coverage from \$500 million to \$180 million. See 51 FR 24456.

III. Discussion

Pursuant to 10 CFR 50.12, the Commission may, upon application by any interested person or upon its own initiative, grant exemptions from the requirements of 10 CFR part 50 when 1) the exemptions are authorized by law, will not present an undue risk to public health or safety, and are consistent with the common defense and security; and 2) any of the special circumstances listed in 10 CFR 50.12(a)(2) are present.

The financial protection limits of 10 CFR 50.54(w)(1) were established after the Three Mile Island accident out of concern that licensees may be unable to financially cover onsite cleanup costs in the event of a major nuclear accident. The specified coverage requirement was developed based on an analysis of an accident at a nuclear reactor operating at power, resulting in a large fission product release and requiring significant resource expenditures to stabilize the reactor conditions and ultimately decontaminate and clean up the site.

The NRC developed these cost estimates from the spectrum of postulated accidents for an operating nuclear reactor and the consequences of any associated release of radioactive material from the reactor. Although the risk of an accident at an operating reactor is very low, the consequences can be large. In an operating plant, the high temperature and pressure of the reactor coolant system, as well as the inventory of relatively short-lived radionuclides, contribute to both the risk and consequences of an accident. With the permanent cessation of reactor operations at LACBWR, the permanent removal of the fuel from the reactor core, and the movement of all the irradiated fuel assemblies into storage at the onsite ISFSI, such accidents are no longer possible. As a result, the reactor, reactor coolant system, and supporting systems no longer operate, and the majority of these components have already been dismantled and

removed from the site as part of the decommissioning process. Therefore, these systems and components no longer serve any function related to the storage of the irradiated fuel. As such, postulated accidents involving failure or malfunction of the reactor, reactor coolant system, or supporting systems are no longer applicable at LACBWR.

During reactor decommissioning, the principal radiological risks are associated with the storage of spent fuel onsite, as well as the inventory of radioactive liquids, activated reactor components, and contaminated materials. In its February 22, 2018, exemption request, LS noted that because all of the irradiated fuel assemblies are currently stored in the onsite ISFSI, a fuel handling accident and a zirconium fire caused by drain down of the spent fuel pool are no longer considered credible events. In the current state of decommissioning at LACBWR, with the reactor building being the only contaminated structure that still remains onsite, only minor liquid and airborne effluent releases resulting from dismantlement activities are considered credible events. The licensee determined that the minimal radioactive material remaining at the site that resulted from LACBWR's operation is insufficient for any potential event to result in exceeding dose limits or otherwise involving a significant adverse effect on public health and safety.

Specifically, there are no credible events at LACBWR that could result in a radiological release exceeding the limits established by the U.S. Environmental Protection Agency's (EPA's) early-phase Protective Action Guidelines (PAGs) of one roentgen equivalent man at the exclusion area boundary, which demonstrates that any possible radiological releases would be minimal and would not require precautionary protective actions (e.g., sheltering in place or evacuation). The staff evaluated the radiological consequences associated with various decommissioning activities, and

credible accident events at LACBWR, in consideration of the permanently shutdown and defueled status of the facility. The possible accident scenarios at LACBWR have greatly reduced radiological consequences. Based on its review, the staff concluded that no reasonably conceivable radiological release event exists that could cause an offsite release greater than the EPA PAGs.

In addition, given that all of the irradiated fuel assemblies at LACBWR have already been moved into storage at the onsite ISFSI, the fuel is no longer thermal-hydraulically capable of sustaining a zirconium fire, and can be air-cooled in all credible accident scenarios and fuel configurations. Since NRC approval of the previous exemption in 1986, which permitted LACBWR to reduce its onsite insurance coverage to \$180 million, the NRC staff has authorized a lesser amount of onsite property damage insurance coverage based on an analysis of the zirconium fire risk. In SECY-96-256, "Changes to Financial Protection Requirements for Permanently Shutdown Nuclear Power Reactors, 10 CFR 50.54(w)(1) and 10 CFR 140.11," dated December 17, 1996 (ADAMS Accession No. ML15062A483), the NRC staff recommended changes to the power reactor insurance regulations that would allow licensees to lower onsite insurance levels to \$50 million upon demonstration that the fuel stored in the spent fuel pool can be air-cooled.

In its Staff Requirements Memorandum to SECY-96-256, dated January 28, 1997 (ADAMS Accession No. ML15062A454), the Commission supported the staff's recommendation that, among other things, would allow permanently shutdown power reactor licensees to reduce commercial onsite property damage insurance coverage to \$50 million when the licensee was able to demonstrate the technical criterion that the spent fuel could be air-cooled if the spent fuel pool was drained of water. The staff has used this technical criterion to grant similar exemptions to other

decommissioning reactors (e.g., Maine Yankee Atomic Power Station, published in the *Federal Register* on January 19, 1999 (64 FR 2920); and Zion Nuclear Power Station, published in the *Federal Register* on December 28, 1999 (64 FR 72700)). These prior exemptions were based on the licensees demonstrating that the spent fuel could be air-cooled, consistent with the technical criterion discussed above. Based on this criterion, the NRC staff determined \$50 million to be an adequate level of onsite property damage insurance coverage for the LACBWR site, given that the spent fuel is no longer susceptible to a zirconium fire.

In addition, the staff has postulated that there is still a potential for other radiological incidents at a decommissioning reactor that could result in significant onsite contamination besides a zirconium fire. In SECY-96-256, the NRC staff cited the rupture of a large contaminated liquid storage tank, causing soil contamination and potential groundwater contamination, as the most costly postulated event to decontaminate and remediate (other than a zirconium fire). The postulated large liquid radiological waste storage tank rupture event was determined to have a bounding onsite cleanup cost of approximately \$50 million. However, decommissioning activities at LACBWR have progressed to such an extent that there are no longer any large radiological waste storage tanks onsite, as described in the most recent update to the D-Plan / PSDAR (ADAMS Accession No. ML18155A395). The only potential source of radioactive liquid remaining at LACBWR is water generated during decommissioning and decontamination activities (e.g., draining, decontamination, and cutting processes), including the retention tank used to store this water, which has a total capacity of 6000 gallons and is therefore considerably less than the 450,000 gallon large contaminated liquid storage tank postulated in SECY-96-256. According to the analysis described in the LACBWR D-Plan / PSDAR, in the event that 80 percent of the retention tank volume were to be

released from the tank via a non-mechanistic rupture, the normal effluent concentration limits of 10 CFR part 20, "Standards for Protection Against Radiation," appendix B, table 2, would not be exceeded. The staff has examined this analysis and concluded that there are no credible phenomena that could reasonably be postulated to cause a release from the LACBWR retention tank that would challenge the assumptions made in SECY-96-256 regarding the rupture of a large contaminated liquid storage tank. Therefore, the staff determined that the licensee's proposal to reduce onsite insurance to a level of \$50 million would be consistent with the bounding cleanup and decontamination cost, as discussed in SECY-96-256, to account for the postulated rupture of the retention tank at the LACBWR site.

A. Authorized by Law

The regulation in 10 CFR 50.54(w)(1) requires each licensee to have and maintain onsite property damage insurance of either \$1.06 billion or whatever amount of insurance is generally available from private sources, whichever is less. In accordance with 10 CFR 50.12, the Commission may grant exemptions from the regulations in 10 CFR part 50, as the Commission determines are authorized by law.

In 1986, the Commission granted LACBWR an exemption from 10 CFR 50.54(w)(1), permitting the reduction of onsite insurance coverage from \$500 million to \$180 million. As explained above, the NRC staff has determined that the licensee's proposed reduction in onsite property damage insurance coverage to a level of \$50 million is consistent with SECY-96-256 because there is no credible risk of a zirconium fire with all irradiated fuel stored in the onsite ISFSI, where it is air-cooled in all accident scenarios.

The NRC staff has determined that granting of the licensee's proposed exemption will not result in a violation of the Atomic Energy Act of 1954, or other laws, as amended. Therefore, based on its review of LS's exemption request, as discussed above, and consistent with SECY-96-256, the NRC staff concludes that the exemption is authorized by law.

B. No Undue Risk to Public Health and Safety

The onsite property damage insurance requirements of 10 CFR 50.54(w)(1) were established to provide financial assurance that following a significant nuclear accident, onsite reactor conditions could be stabilized and the site decontaminated. The requirements of 10 CFR 50.54(w)(1) and the existing level of onsite insurance coverage for LACBWR are predicated on the assumption that the reactor is operating. However, LACBWR is a permanently shutdown and defueled facility. The permanently defueled status of the facility has resulted in a significant reduction in the number and severity of potential accidents, and correspondingly, a significant reduction in the potential for and severity of onsite property damage. The proposed reduction in the amount of onsite insurance coverage does not impact the probability or consequences of potential accidents. The proposed level of insurance coverage is commensurate with the reduced

consequences of credible nuclear accidents at LACBWR. Therefore, the NRC staff concludes that granting the requested exemption will not present an undue risk to the health and safety of the public.

C. Consistent with the Common Defense and Security

The proposed exemption would not eliminate any requirements associated with physical protection of the site and would not adversely affect LS's ability to physically secure the site or protect special nuclear material. Physical security measures at LACBWR are not affected by the requested exemption. Therefore, the proposed exemption is consistent with the common defense and security.

D. Special Circumstances

Under 10 CFR 50.12(a)(2)(ii), special circumstances are present if the application of the regulation in the particular circumstances would not serve the underlying purpose of the rule or is not necessary to achieve the underlying purpose of the rule. The underlying purpose of 10 CFR 50.54(w)(1) is to provide reasonable assurance that adequate funds will be available to stabilize reactor conditions and cover onsite cleanup costs associated with site decontamination, following an accident that results in the release of a significant amount of radiological material.

Because LACBWR is permanently shutdown and defueled, with all irradiated fuel assemblies stored in the onsite ISFSI, and a very small radioactive source term remaining at the site given the progress of decommissioning and dismantlement activities, it is no longer possible for the radiological consequences of design-basis accidents or other credible events at LACBWR to exceed the limits of the EPA PAGs at the exclusion area boundary. Therefore, the staff concludes that the application of the

current requirements in 10 CFR 50.54(w)(1), as exempted, for LS to maintain \$180 million in onsite insurance coverage is not necessary to achieve the underlying purpose of the rule for the permanently shutdown and defueled LACBWR facility.

Under 10 CFR 50.12(a)(2)(iii), special circumstances are present whenever compliance would result in undue hardship or other costs that are significantly in excess of those contemplated when the regulation was adopted, or that are significantly in excess of those incurred by others similarly situated.

The NRC staff concludes that if the licensee was required to continue to maintain an onsite insurance level of \$180 million, the associated insurance premiums would be in excess of those necessary and commensurate with the radiological contamination risks posed by the site. In addition, such insurance levels would be significantly in excess of other decommissioning reactor facilities that have been granted similar exemptions by the NRC.

As such, the NRC staff finds that compliance with the existing requirement would result in an undue hardship or other costs that are significantly in excess of those contemplated when the regulation was adopted and are significantly in excess of those incurred by others similarly situated. Therefore, the special circumstances required by 10 CFR 50.12(a)(2)(ii) and 10 CFR 50.12(a)(2)(iii) exist for the LACBWR facility.

E. Environmental Considerations

The NRC approval of an exemption to insurance or indemnity requirements belongs to a category of actions that the Commission, by rule or regulation, has declared to be a categorical exclusion, after first finding that the category of actions does not individually or cumulatively have a significant effect on the human environment. Specifically, the exemption is categorically excluded from further analysis under

10 CFR 51.22(c)(25).

Under 10 CFR 51.22(c)(25), granting of an exemption from the requirements of any regulation of chapter I to 10 CFR is a categorical exclusion provided that (i) there is no significant hazards consideration; (ii) there is no significant change in the types or significant increase in the amounts of any effluents that may be released offsite; (iii) there is no significant increase in individual or cumulative public or occupational radiation exposure; (iv) there is no significant construction impact; (v) there is no significant increase in the potential for or consequences from radiological accidents; and (vi) the requirements from which an exemption is sought involve: surety, insurance, or indemnity requirements.

The Director, Division of Decommissioning, Uranium Recovery, and Waste Programs, Office of Nuclear Material Safety and Safeguards, has determined that approval of the exemption request involves no significant hazards consideration because reducing the licensee's onsite property damage insurance for LACBWR does not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; or 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. The exempted financial protection regulation is unrelated to the operation of LACBWR. Accordingly, there is no significant change in the types or significant increase in the amounts of any effluents that may be released offsite; and no significant increase in individual or cumulative public or occupational radiation exposure.

The exempted regulation is not associated with construction, so there is no significant construction impact. The exempted regulation does not concern the source term (i.e., potential amount of radiation in an accident), nor mitigation. Therefore, there is no significant increase in the potential for, or consequences of, a radiological accident.

In addition, there would be no significant impacts to biota, water resources, historic properties, cultural resources, or socioeconomic conditions in the region. The requirement for onsite property damage insurance involves surety, insurance, and indemnity matters. Therefore, pursuant to 10 CFR 51.22(b) and 10 CFR 51.22(c)(25), no environmental impact statement or environmental assessment need be prepared in connection with the approval of this exemption request.

IV. Conclusions

Accordingly, the Commission has determined that, pursuant to 10 CFR 50.12(a), the exemption is authorized by law, will not present an undue risk to the public health and safety, and is consistent with the common defense and security. Also, special circumstances are present. Therefore, the Commission hereby grants LS an exemption from the requirements of 10 CFR 50.54(w)(1), to permit the licensee to reduce its onsite property damage insurance coverage to a level of \$50 million.

Dated at Rockville, Maryland, this 26th day of July 2018.

For the Nuclear Regulatory Commission.

John R. Tappert, Director,
Division of Decommissioning, Uranium
Recovery, and Waste Programs,
Office of Nuclear Material Safety and
Safeguards.

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